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# AN APPRAISAL OF THE BOMBING OF NORTH VIETNAM<sup>(U)</sup>

(THROUGH 29 FEBRUARY 1968)

S-3004/AP4A

Prepared Jointly by  
The Central Intelligence Agency  
and  
The Defense Intelligence Agency



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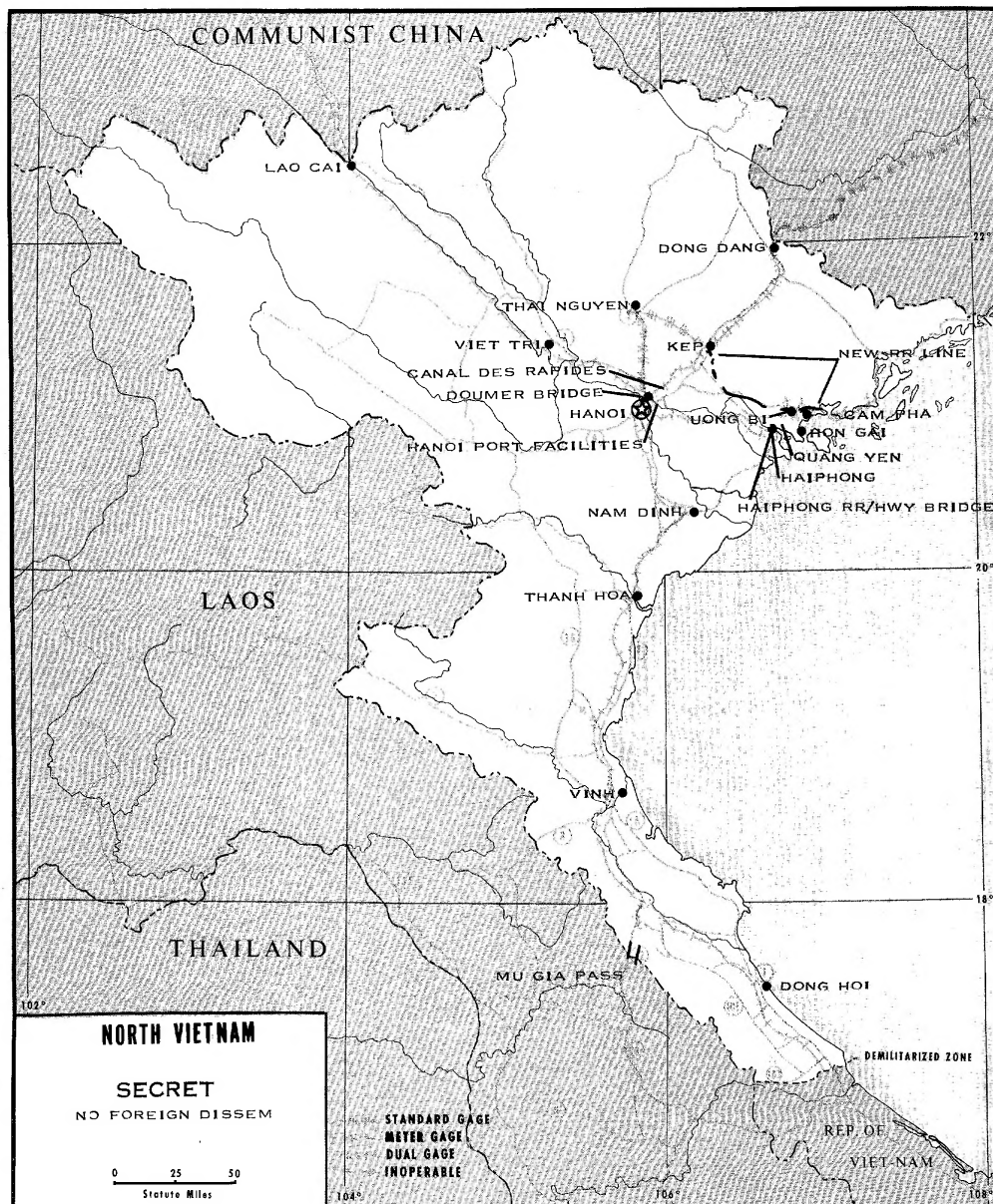
## AN APPRAISAL OF THE BOMBING OF NORTH VIETNAM (THROUGH 29 FEBRUARY 1968)

### FOREWORD

This report is prepared at the request of the Secretary of Defense for an evaluation of certain effects of the ROLLING THUNDER program. The report covers three general areas of concern: Effects on Military Targets; Leadership and Public Reactions; and Effects on the NVN Economy. The discussion of political effects is limited to those developments within North Vietnam which relate to Hanoi's attitude toward continuing the war and the effects the ROLLING THUNDER attack has on civilian morale in North Vietnam.

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AN APPRAISAL OF THE BOMBING OF NORTH VIETNAM  
THROUGH FEBRUARY 1968

SUMMARY

1. (S/NFD) Air strikes against North Vietnam were at the lowest level since February 1966. Poor flying weather and diversions of aircraft to South Vietnam continued to minimize air activity. Few important targets were struck, and most attacks were against lines of communication and military targets in the Panhandle.
2. (S/NFD) The capability of the transport system improved slightly, although traffic continued to be hampered primarily by the interdicted Doumer Bridge and previous damage to bridges around Haiphong. The flow of traffic in these areas apparently remained at a comparatively high level through the use of bypasses. Traffic into the Lao Panhandle continued to increase for the second consecutive month.
3. (S/NFD) No significant damage was known to have been inflicted on North Vietnam's economy during the month. About 35 per cent of the total electric generating capacity continues in operation. Some additional capacity is supplied by about 3,000 diesel generating sets imported primarily since 1965 that are used mainly to satisfy local and high priority requirements. Total seaborne imports dropped below the monthly average for 1967, but petroleum imports continued at the high level of recent months.

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4. (S/NFD) Cumulative measurable damage inflicted on the economy and the military establishment is estimated at \$430 million. The air strikes have degraded North Vietnam's capability for sustained large-scale military operations in South Vietnam. Nevertheless, recent events demonstrate that North Vietnam has the capability to support military activities in the South at increased levels of combat.

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Effects on Military Targets

1. (S/NFD) During February, air strikes were limited to about 50 per cent of the level of January by continued adverse weather and the diversion of some sorties to South Vietnam. The preponderance of effort continued to be against lines of communication, primarily in the southern Panhandle of North Vietnam. The Hanoi Port facilities were attacked for the first time. Airfields, electric power plants, SAM and AAA sites, storage areas, and artillery and troop positions were also attacked.

2. (S/NFD) Traffic in the Hanoi area continued to be disrupted by the interdicted Doumer Bridge over the Red River. The bridge has been down since mid-December; lack of repair activity may indicate that the bridge is too severely damaged to reactivate while the air campaign continues. Truck and water traffic and shuttling by rail ferry continue to be necessary to move goods into Hanoi. Moderate to heavy truck traffic was noted during the month at three by-passes near the interdicted Doumer Bridge. Truck congestion at these crossings suggests delays in moving goods to Hanoi from the north and east. The Railroad/Highway Bridge over the Canal des Rapides was restruck in mid-February, but rail traffic was disrupted for only about three days.

3. (S/NFD) Traffic to and from Haiphong Port continued to be disrupted by previous damage to the original bridges. A rail pontoon bridge allows the movement of some goods from the port by rail. Repair

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activity continues on at least two of the interdicted highway bridges. In addition, several highway pontoon bridges and ferries are available for truck traffic. Even though cargo was being cleared from the port by rail and highway, emphasis reportedly continued to be placed on the use of lighters to move goods inland.

4. (S/NFD) Strikes against the rail system declined during the month, with most attacks concentrated on the line south of Hanoi. The Thanh Hoa Railroad/Highway Bridge, damaged on 18 January, was repaired by 4 February. Some rail traffic was noted moving on the Vinh line. There was no significant damage to the rail lines. Railroad rolling stock reported destroyed was at the lowest level since the fall of 1966.

5. (S/NFD) Construction of the Kep-Hon Gai rail line has progressed considerably since first noted. Approximately 44 miles of the rail bed is in various stages of construction, from initial draining to grading. The 56-mile line will connect the Hanoi-Dong Dang line in the Kep area with the port of Hon Gai.

6. (S/NFD) The relatively low levels of interdiction of the highway network north of Vinh permitted the North Vietnamese to repair and construct bridges, bypasses, and other crossings. Air activity, augmented by naval surface attacks, however, resulted in the intermittent detail of segments of Route 1A between Vinh and the DMZ. Route 1111, an alternate and feeder route to Route 1A from the beach area adjacent to the DMZ, was reported unusable in early February but had been sufficiently repaired by mid-month to accommodate vehicular traffic.

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7. (S/NFD) Photography of 8 February showed at least 50 POL trucks in Nam Dinh, the largest concentration ever observed outside of the Hanoi-Haiphong area. This may indicate a southward shift of some POL supply facilities to aid in refueling trucks moving into the Panhandle. Concentrations at Nam Dinh and Thanh Hoa indicate that the North Vietnamese continue to use their larger towns as stop over points for southward shipment of supplies. In addition, radar detected a substantial number of targets moving at night south of Vinh along Routes 1A, its feeder routes, and Route 15. Road watch teams deployed near the Mu Gia Pass along Route 15 reported an increase in vehicle traffic for the second consecutive month. A daily average of 41 trucks was noted moving south in February, compared with 25 in January.

8. (S/NFD) Although increasingly large numbers of motor vehicles have been reported destroyed or damaged during the ROLLING THUNDER program, the North Vietnamese have maintained their inventory above the estimated prebombing level of 9,000 (including 3,000 military trucks). During 1965-66, imports of motor vehicles were considerably greater than losses, contributing to an over-all increase in the inventory to between 11,000 and 13,000 at the end of 1966. In 1967 the inventory declined until December, when more than 1,000 trucks were imported, bringing the inventory back to about the 1966 level.

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9. (S/NFD) During February the Hanoi Port facilities, which handle 30 per cent of all inland waterway traffic were attacked for the first time. Strikes were also conducted against other waterway-related facilities, including eight inland waterway transshipment points and three coastal transshipment sites. Recent photography revealed the Quang Yen transshipment point, 11 nautical miles north-east of Haiphong, was highly active; this facility is possibly involved in an effort by the North Vietnamese to increase the efficiency of port operations in Haiphong through direct lighterage to the Quang Yen facility. Pilot reports of watercraft destroyed and damaged declined to one of the lowest levels of the air campaign --about 70 during February compared with more than 770 in January.

10. (S/NFD) MIGs continued to be active and engaged US aircraft on 17 occasions during the month. Five MIGs including three MIG-21s were destroyed. Most air defense reactions took place to the north and northwest of Hanoi, but a few intercepts occurred southwest of the city. No perceptible changes in interception deployment patterns were detected. For the second consecutive month, SAM activity was limited -- only 128 missiles were fired in February. Most of the activity remained near Hanoi with some near Haiphong and, occasionally, near Thanh Hoa and Vinh. SAM indicators were frequently noted above the DMZ, but only one missile reportedly was fired from this area during the month. The probable target was a KC 135 tanker operating

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well off shore. A total of 12 US aircraft were lost: three to MIGs, four to SAMs, and the remaining five to AAA or unknown causes.

11. (S/NFD) The disruption of the vital lines of communication into Hanoi from the north, out of Haiphong, and south from Thanh Hoa to the DMZ continue to make the distribution of military and economic supplies more time-consuming and costly. Poor flying conditions enabled the North Vietnamese to move increased tonnages to the DMZ and Laos and eventually to South Vietnam. The cumulative effects of the strikes have degraded North Vietnam's capability for sustained large-scale conventional military operations against South Vietnam. Nevertheless, the Tet offensive and subsequent activity demonstrate that North Vietnam has the capability to support military activities in South Vietnam at increased levels of combat.

Leadership and Public Reactions

12. (S/NFD) The Hanoi leadership's apparent resolve to prosecute the war remained unchanged during the past several weeks. At the same time, the regime has maintained its pressure on the United States for a bombing halt. In a broadcast on 29 February, the North Vietnamese recorded one of the most forceful restatements of their position on holding talks in return for an end to the bombing. An article in a 26 February issue of the Vietnam Courier also rejected all interpretations of the San Antonio statement and ruled out any reciprocity from the North Vietnamese for an end to the bombing.

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13. (S/NFD) Reports indicate that the people of Hanoi were initially buoyed up by the regime's propaganda on the success of the uprising in the South. Subsequently, some have been disillusioned when the bombing continued and when the people discovered that regime claims of the fall of Saigon and the execution of government leaders were not true.

Effects on the Economy

14. (S/NFD) Air strikes against industrial targets during February were limited to radar systems run against four electric power facilities -- Uong Bi, Thai Nguyen, Thanh Hoa, and Ban Thach. The extent of damage inflicted by these attacks is not known because of a lack of adequate post-strike photography. Six powerplants in the main Hanoi-Haiphong power network are estimated to be in partial operation, supplying about 30 per cent of the network's prestrike capacity. Two of the four plants outside the main network damaged by air strikes are believed to have been partly restored for operation. About 35 per cent of the national pre-strike generating capacity is in operation.

15. North Vietnam has accumulated a substantial inventory of diesel-driven electric generating equipment; imports since 1965 having brought the total to an estimated 3,000. Although these generating sets represent a capability to produce roughly 20 per cent of pre-strike electric power output, their use is believed to be primarily to support transportation and agriculture and such high priority industries as machine building.

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16. (S/NFD) The high level of petroleum deliveries to North Vietnam continued, with about 33,000 metric tons being imported in February. Nearly 11,000 additional tons were shipped on the North Vietnamese account to Whampoa, China, from the Soviet Far East. This was the fourth such shipment to China since November 1967, and deliveries probably will continue in March and April. Petroleum consumption as well as stocks on hand have increased gradually since the third quarter of 1967. Consumption during January and February is estimated to have increased to around 25,000 tons a month compared with a monthly average of about 20,000 tons during 1967. Stocks at the end of February are estimated to be as much as 85,000 tons, equivalent to at least three months' supply at the current rate of consumption.

17. (S/NFD) Identified seaborne imports, including petroleum, dropped to about 93,000 metric tons during February, less than one half the record volume observed in January and 20,000 tons below the monthly average for 1967. Food imports fell to 14,000 tons, about one fourth of the previous month. Imports of fertilizer and miscellaneous and general cargoes also decreased significantly from January. Timber was imported for the second consecutive month.

18. (S/NFD) Identified seaborne exports totaled 61,000 metric tons in February, a marked increase over the level of 44,000 tons achieved during the preceding month. Exports of coal from Cam Pha and Hon Gai, amounting to 53,000 tons, accounted for most of the

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increased tonnages shipped. There continued to be no seaborne exports of apatite, cement, or pig iron.

19. (S/NFD) The average layover time for freighters departing Haiphong rose sharply from 15 days in January to 27 days in February reflecting the record number of freighters (39) arriving in January. Foreign freighter arrivals declined to 23 in February. At the end of February, however, a number of freighters had been in port for at least a month, indicating that the average layover time for March will remain high.

20. (S/NFD) Cumulative measurable damage attributable to the ROLLING THUNDER program through January 1968 is estimated at \$430 million as shown in Tab B.

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 RESULTS OF STRIKES ON NVN TARGETS <sup>a/</sup> THRU 29 FEBRUARY 1968

Fixed Targets	Total Targets <sup>c/</sup>		Targets Struck		<sup>e/</sup> No. of Attacks	<sup>b/</sup> Strike Sorties	% of National Capacity Destroyed or inactive because of air strikes
	National Capacity (X 1000)	JCS <sup>d/</sup> Targeted No %	No	%			
Barracks	443 men	65 41.1	57	35.6	405	3212	28
Ammo Depots	112.6MT	18 100	18	100	118	1398	77.0
POL Storage *	133.5MT	13 100	13	102	91	756	83.2
Supply Depots	10550SqFt	29 45.2	25	33.6	93	927	21.5
Power Plants	192KW	20 92.1	15	85.8	122	894	61.8
Maritime Ports	8.2ST/DY	9 97	7	48	31	295	13.6
RR Yards	49.7	4 78	3	54	92	675	10.6
RR Shops		3 88	2	68	6	58	47.0
<b>Industrial:</b>							
Explosive Plant	1MT	1 100	1	100	20	126	100
Iron & Steel	300MT(PIG)	1 100	1	100	25	295	100
Cement Plant	600MT	1 100	1	100	1	57	100
Airfields	22	12**	11**	83	163	2062	38.8
Naval Bases	11	5	4	57	30	295	30.4
Bridges	1632	61	59		614	5763	63.0
Commo Install	59	5	2		4	20	20
Radar Sites	160	5	5		80	459	50.0
SAM Sites	221		58		12	388	
Locks and Dams	94	8	2	38.6	2	10	38.6
Ferries	160		11		7	44	

\* JCS targets only; does not include dispersed storage.

Total Sorties: 16,547

\*\* Includes non-JCS numbered Hoa Lac Airfield.

Armed Recce Sorties	Results	
	Destroyed	Damaged <sup>f/</sup>
194,584	Vessels 9,790	18,016
	Vehicles 6,177	5,552
	RR Stock 1,909	3,234

- <sup>a/</sup> Assessments are based on best information received; will be refined as more accurate information becomes available.
- <sup>b/</sup> Strike plus flak suppression sorties. Some applied to multiple targets; in this summary assigned to principal target.
- <sup>c/</sup> These columns are not additive, since the number of installations, both targeted and struck in some cases, apply to more than one category of targets (i.e., barracks, supply and ammo depots).
- <sup>d/</sup> Percentages of national capacity, where appropriate.
- <sup>e/</sup> Also numerous attacks during armed recce and other missions.
- <sup>f/</sup> Also numerous installations, AA sites, bridges, etc., attacked and road and rail cuts made.

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TAB A

Value of Economic and Military Damage  
 Attributed to the ROLLING Thunder Program  
 1965 Through February 1968

<u>Economic</u>		<u>Military</u>	
<u>Direct Losses</u>	<u>Million US\$</u>	<u>Direct Losses</u>	<u>Million US\$</u>
Railroad/Highway Bridges	36.8 <u>a/b/</u>	Barracks	31.2 <u>a/</u>
Transportation Equipment	78.3	Ammunition Depots	5.3 <u>a/</u>
Electric Powerplants	32.9	Motor Vehicle Depots and	
Petroleum	7.5	Supply Areas	11.0 <u>a/</u>
Manufacturing Facilities	18.1	Airfields	1.9 <u>a/</u>
Railroad Yards and Shops	6.6 <u>a/</u>	Radar and Communications	
Maritime Ports and Shipyards	2.7 <u>a/</u>	Sites	2.9 <u>a/</u>
Miscellaneous Armed		SAM Sites	8.7 <u>a/</u>
Reconnaissance	2.3	Naval Bases	1.9
		Aircraft	46.8
SUBTOTAL, Direct Losses	185.2	Naval Craft	4.8
		Miscellaneous Armed	
<u>Indirect Losses</u>		Reconnaissance	20.6
Exports	38.3	TOTAL, Direct Losses	135.1
Agriculture <u>c/</u>	60.5		
Fishing	11.0		
		<u>TOTAL</u>	
SUBTOTAL, Indirect Losses	109.8	<u>Million US\$</u>	
		Economic	295
TOTAL, Direct & Indirect	295.0	Military	135
		TOTAL	430 <u>d/</u>

- a/ Estimate is incomplete because of inadequate post-strike photography.
- b/ Of the total, \$7.8 million is estimated to have been expended to date on the repair of damaged and destroyed bridges and \$29.0 million is estimated for complete restoration in the future of bridges damaged or destroyed. In addition, \$1.6 million would be required to make temporary repairs to presently unrepai red bridges.
- c/ It should be noted that losses of agricultural crops are arbitrarily attributed entirely to the indirect effect of the bombing. An unknown part of these losses is in fact due to weather and other natural causes.
- d/ Excluding the cost of trucks destroyed and damaged in Laos and economic and military facilities and equipment destroyed and damaged by US naval operations along the coast of southern North Vietnam.

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TAB B

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AN APPRAISAL OF THE BOMBING OF NORTH VIETNAM

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BUREAU OF THE BUDGET	1
TREASURY (Secretary)	1
USIA	1
AID	1
NASA	1
NSA	5
STATE	20
AEC	1
FBI	1
NIC	1
ACDA	1
CHAIRMAN, JCS	1
DIRECTOR, JOINT STAFF	1
J-1	1
J-3	2
J-4	1
J-5	1
J-6	1
SACSA	1
NMCC	3
ARMY:	
CHIEF OF STAFF	2
DCSOPS	1
ACSFOR	1
ACSI	1
ACSI-CI	1
ACSI-Eastern	1
STAG	1

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NFOIO	1
92F	1
92F6	1
AIR FORCE:	
CHIEF OF STAFF	2
ACSI (AFNIN)	1
AFNINDE	8
AFNIEBB	1
AFISI (Spec Investigation)	1
AUL (Air Univ Library)	1
MARINE CORPS:	
COMMANDANT	1
G-2	1
CINCPAC	2
CINCPACAF	10
CINCUSARPAC	1
CINCPACFLT	1
COMUSMACV	2
7AF	2
COMSEVENTHFLT	1
COMATKCARSTRIKEFORSEVENTHFLT (CTF 77)	1
CINCLANT	1
CINCSTRIKE	1
CINCSAC	1
SAC 544	1
CINCTAC	1
AFSTRIKE	1
CONTIC	1
CINCALCOM	1
CINCEUR	1
CINCUSAREUR	1
CINCUSAFE	1
CINCNAVEUR	1
CINCCONAD	1
CIA	125
ARMED FORCES STAFF COLLEGE	1
DIA	39

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